

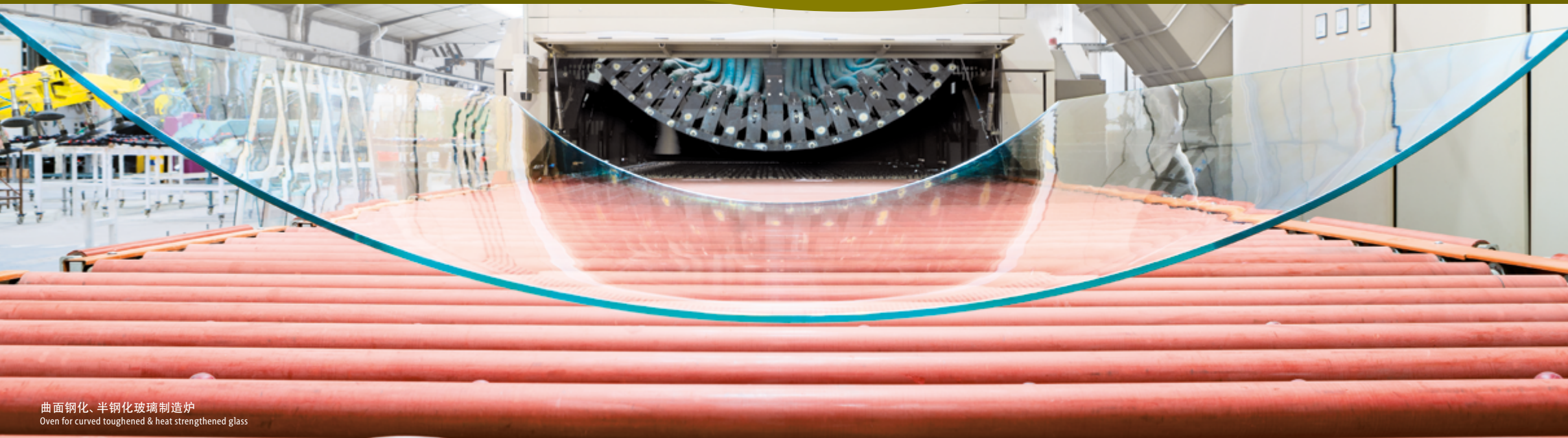
曲面玻璃 Curved glass

曲面 / Curved

钢化 / Toughened

半钢化 / Heat Strengthened

CRITEMP®



曲面钢化、半钢化玻璃制造炉
Oven for curved toughened & heat strengthened glass

产品简介

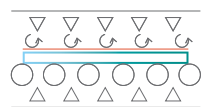
钢化曲面玻璃的制作程序包括加热、弯曲,最后还有称为「淬火」的快速冷却步骤。

材料的分子结构发生改变, 玻璃表面形成高抗压强度, 抵抗机械, 压缩和冲击应力的性能得到提升。

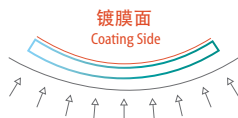
Definition

Curved tempered glass is produced throughout a process of heating, bending and a final stage of fast cooling, known as quenching.

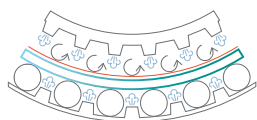
As a result, the molecular structure of the material is altered and high compressive stresses appear on the glass surfaces, improving its resistance to mechanical, compressive and impact stresses onto the glass.



加热
Heating



弯曲
Bending



快速冷却(淬火)
Fast cooling (quenching)

曲面玻璃 Curved glass

钢化 / 半钢化曲面玻璃
Curved Toughened / Heat Strengthened



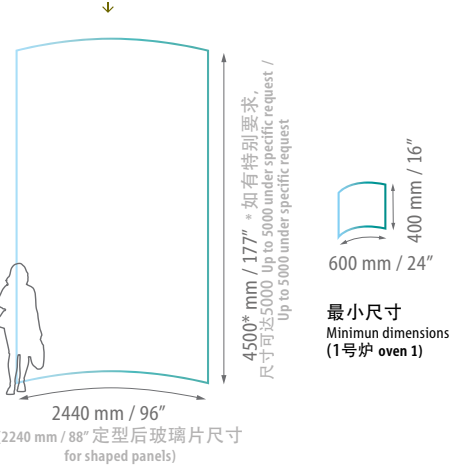
尺寸 Dimensions

1号炉 Oven 1

厚度 Thickness	最小半径 Min. Radius	角度 Angle
6 mm	1000 mm	140°
8 mm	1200 mm	116°
10 mm	1200 mm	116°
12 mm	1500 mm	93°
15 mm	2000 mm	70°
19 mm	2500 mm	56°

半钢化玻璃, 厚度: 5, 6, 8, 10
For heat strengthened glass, Thicknesses: 5, 6, 8, 10

最大半径 R max. 20000 半钢化
25000 钢化
最小半径 R min. 1000

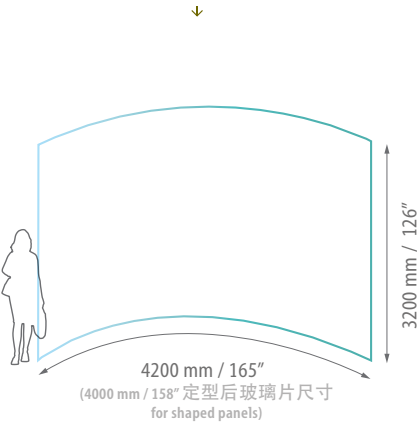


2号炉 Oven 2

厚度 Thickness	最小半径 Min. Radius	角度 Angle
6 mm	2000 mm	120°
8 mm	2000 mm	120°
10 mm	2000 mm	120°
12 mm	3000 mm	80°
15 mm	3500 mm	68°
19 mm	3500 mm	68°

半钢化玻璃, 厚度: 6, 8, 10 For heat
strengthened glass, Thicknesses: 6, 8, 10

最大半径 R max. 16000
最小半径 R min. 2000



曲面玻璃 Curved glass

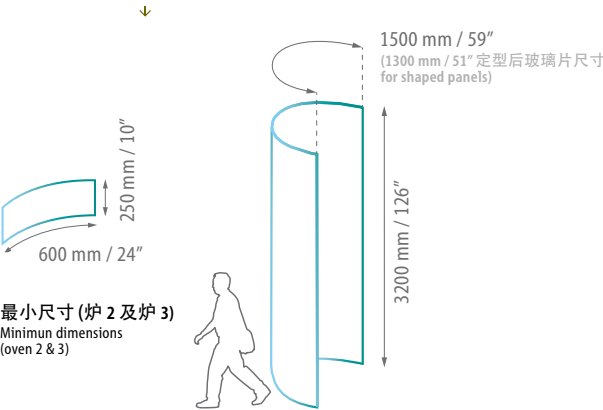
钢化 / 半钢化曲面玻璃
Curved Toughened / Heat Strengthened

3号炉 Oven 3

厚度 Thickness	最小半径 Min. Radius	角度 Angle
6 mm	700 mm	132°
8 mm	750 mm	114°
10 mm	1000 mm	98°
12 mm	1200 mm	71°

半钢化玻璃, 厚度: 6, 8, 10
For heat strengthened glass, Thicknesses: 6, 8, 10

最大半径 R max. 20000
最小半径 R min. 700



Puente Champalimaid
Lisbon 2010
里斯本 Architect:
Charles Correa / Glinnt

镀膜 COATINGS

镀膜玻璃的最小半径取决于镀膜类型, 具体项目具体分析。
Glass with coatings, minimum radius to be discussed depending on coating type

欢迎垂询定制更大尺寸产品
For larger dimensions, please contact Cricursa

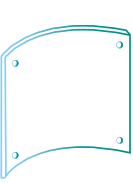


准备付运的半圆玻璃柱内部
View from the inside of a half cylinder ready for shipping

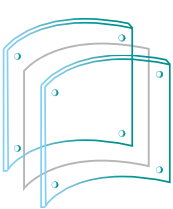
玻璃类型

- 非镀膜玻璃：透明浮法玻璃、超白玻璃、本体着色玻璃、蚀刻玻璃和磨砂玻璃。视图案及深度而定，也可制成控制玻璃、压延玻璃、压花玻璃和窑烧玻璃。如需用到彩釉，彩釉应覆于凹面。
- 镀膜玻璃：曲面钢化 and 半钢化玻璃可使用最高性能的低辐射镀膜和高选择性镀膜，获得较好的可见光透过率、G值和U值(中空玻璃1.0 W / m2-K，三层玻璃0.6 W/m2-K)。软镀膜必须覆于凹面。

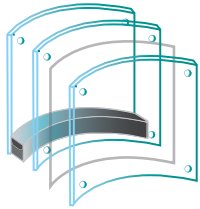
热浸测试(HST)
• 6000x3000mm(236"x118")



钢化曲面玻璃
Curved tempered glass



钢化夹胶玻璃
Tempered laminated glass



钢化夹胶中空玻璃
Tempered laminated double-glazing

Glass type

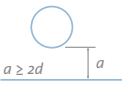
- **Non-coated glass:** clear float, low iron, body-tinted, acid etched or sandblasted. Drawn/rolled/patterned and kiln cast glass depending on the pattern and its depth. Screen-printed whenever the ceramic frit is located on the concave surface.
- **Coated glass:** curved tempered and heat strengthened process opens the door to the most powerful low-e and high selectivity coatings, that allow for high performances in LT, G-Value and U-Value (1.0 W/m²-K in double-glazing; 0.6 W/m²-K in triple glazing). Mandatory soft coatings always on concave surface.

Heat Soak Test (HST)
• 6000x3000 mm (236"x118")

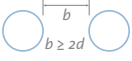
钢化 / 半钢化曲面玻璃
Curved Toughened / Heat Strengthened

UNE-EN 12150规范的钻孔位置

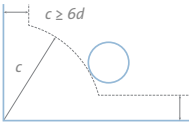
- 玻璃名义厚度(d)
- 玻璃片尺寸(B, H)
- 钻孔直径(Ø)
- 玻璃片形状
- 钻孔数量



1) 钻孔到玻璃边缘的距离
Distance on the edges of the glass panel



2) 两个钻空间的距离
Distance between two holes



3) 角落处钻孔边角的距离
Distance on the corners of the glass panel

POSITION OF HOLES ACCORDING TO UNE-EN 12150

- Nominal thickness of glass (d)
- Panel dimensions (B, H)
- Hole diameter (Ø)
- Panel shape
- Number of holes

		耐热性 Thermal resistance	机械阻力 Mechanical resistance	表面压力 Surface compression
退火玻璃 Annealed	浮法玻璃 Float	40 K	45 N/mm ²	0 MPa
	S-P	100 K	70 N/mm ²	40-60 MPa
半钢化玻璃 Heat Strengthened	滚轧玻璃 Rolled	100 K	45 N/mm ²	40-60 MPa
	浮法玻璃 Float	100 K	55 N/mm ²	40-60 MPa
钢化玻璃 Tempered	S-P	200 K	120 N/mm ²	>90 MPa
	滚轧玻璃 Rolled	200 K	75 N/mm ²	>90 MPa
			90 N/mm ²	>90 MPa



曲面玻璃 Curved glass

曲面钢化、半钢化玻璃 Curved Toughened / Heat Strengthened

特色

- 生产时间短：加热过程快，重力弯曲迅速，淬火过程快
- 只适用于单曲玻璃，但特殊情况下可制造圆锥形玻璃
- 广泛的玻璃组成供选择：
 - 夹胶玻璃各层厚度应相同（如6+6mm、8+8mm等）
 - 彩釉须置于玻璃凹面
 - 高选择性涂层覆于凹面，硬涂可覆于任意面
- 最大尺寸取决于制造设备(详见50页)
- 强制对流炉和快速热弯过程使产品具有良好的视觉性能
- 表面应力较高(90-120MPa)
- 破碎后：碎裂为小颗粒
- 玻璃弯曲后无法进行边缘处理

Characteristics

- Fast production: quick heating up followed by immediate gravity bending & fast quenching
- Only single radius is feasible, although in some specific cases, conical glass can be considered
- General compositions available:
 - If laminated, thickness rather be equal (for instance, 6+6mm, 8+8mm,....)
 - Ceramic frit always on concave surface
 - High selectivity coatings (on concave surface). Hard coatings can go either on convex or concave surface
- Maximum sizes based on ovens available (see page 50)
- Good optical quality due to the usage of convection non-static furnaces with convection heating up and high speed bending
- High surface compression (90-120MPa)
- Breakage pattern: little shards known as "dice"
- No possibility of edge working once the glass has been curved

